Missouri Department of Natural Resources
Data Processing Standard

Topic: Computerized Date Formats

Item: C

Status: Version 1.0

Updated: June 2, 1997

See also: (References in Provision A.1-A.3)

This Data Processing Standard reviewed and approved

by:_____
David Shorr, Director
Missouri Dept. of Natural Resources

on:_____
Date

Introduction:

The department is committed to establishing a common date structure that will resolve one of the causes of the year 2000 computer problem. The problem occurs when computer systems pass abbreviated dates that use only two digits to represent the year portion of a date (e.g., 96=1996). These ambiguous dates will cause problems in the year 2000. An abbreviated date does not allow computer applications to determine which Century a two-digit year pertains to (e.g., 25 could mean 1925 or 2025).

Definitions:

Date	- A 24-hour period identified by the day, month, and year in which it occurred (based on the Gregorian calendar).
Day	- A 24-hour period during which the earth completes one rotation.
Month	- One of twelve divisions of a year (based on the Gregorian calendar).
Gregorian Calendar	- A calendar in general use, introduced in 1582 to correct an error in the Julian calendar.
Leap Year	- A year (such as 2000) that is divisible by four with no remainder, is not a centennial year, unless the centennial year is divisible by 400 with no remainder. The year 2000 is a leap year containing 366 days (based on the Gregorian calendar).
Year	- The time required for the earth to make one revolution around the sun (based on the Gregorian calendar).
Common Year	- A year with 365 days (based on the Gregorian calendar).
Centennial Year	- A year occurring every 100 years (based on the Gregorian calendar).

General Provisions:

A. The department has adopted a four-digit date format developed by the National Institutes Standards and Technology (NIST). This standard will ensure that computer applications are

able to determine which Century dates belong in. This standard is based on the following references:

1. American National Standard Representation for Calendar Date and Ordinal Date for Information Interchange, X3.30-1985 (R1991), American National Standards Institute (ANSI).
2. Federal Information Processing Standards Publications (FIPS PUB) 4-1, Representation of Calendar Date and Ordinal Date for Information Interchange, 1988, January 27. This publication adopts ANSI X.30-1985 (R1991). Change number one of March 25, 1996, highly recommends that four-digit year time elements be used, and that two-digit year time elements should not be used for the purposes of data interchange among U.S. Government agencies.
3. International Organization for Standards, Data Elements and Interchange Formats — Information Interchange — Representation of Dates and Times, (ISO) ISO 8601. International Organization for Standards, First Edition, 1988, June 15.

B. Calendar dates are based on the Gregorian calendar, represented in an eight-digit sequence composed of numeric characters in the format CCYYMMDD, where:

1. "CC" represents the Century.
2. "YY" represents the decade and year within the Century.
3. "MM" represents the month. The first month is represented by the ordinal number "01," and subsequent months are numbered in ascending sequence to "12."
4. "DD" represents the day. The first day of the month is represented by the ordinal number "01," and subsequent days are numbered in ascending sequence to the end of the month.

and

5. The order of the Century, year, month, day is high to low.
6. Only numbers are used to represent the month.
7. Numbers representing the month and day include leading zeros if the number has only one digit (e.g., the month of May is "05" and the 7th day of the Month is "07".
8. Dates are stored without separators between Century, year, month, day (i.e., no slashes, hyphens, or spaces).

C. By the year 2000, all mission critical applications will include a Century value and support the exchange of dates in a standard format. The following are examples of the standard date format:

Standard Date Format	Alphanumeric Format
19970101	January 1, 1997
19980704	July 4, 1998
20001225	December 25, 2000

D. The date standard is not intended to affect the meaning assigned to a date element (e.g., a fiscal year). Nor is it intended to affect the format used to print or display dates for users when they can correctly interpret the Century value.

E. Commercial off-the-shelf and custom-designed applications must be able to import and export dates using the standard date format.

F. Character string, date information is represented in binary coded characters using the American Standard Code for Information Interchange (ASCII).

G. The Director of Management Information Services is responsible for approving waivers of compliance with the standard. A waiver may be granted for:

   1. Applications that achieve compliance by means other than the use of this standard.
   2. Applications that will be removed from use before the year 2000.
   3. Where the cost of implementing the standard is significantly higher than the benefits received.
   4. A risk assessment indicates there is little impact if the application fails.

H. Information Resource Managers (IRMs) are responsible for ensuring the date standard is supported in their applications, and for providing technical assistance to users who collect date-sensitive information.

I. Users are responsible for making sure their applications correctly interpret date-sensitive information.